CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NUMBER: 89-115

SITE CLEANUP REQUIREMENTS FOR:

LYNCH CIRCUITS, INC.
and
SILICONIX, INC.
1140 WEST EVELYN AVENUE FACILITY
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Lynch Circuits, Inc.,(LC), the current owner, operated from 1977 to 1987 the facility located at 1140 West Evelyn Avenue, Sunnyvale, California (facility or site) as shown on the location map of Appendix B. Siliconix, Inc., (SI) a former occupant of the facility operated the facility from 1962 to sometime in 1970. Lynch Circuits, Inc. and Siliconix, Inc. shall hereinafter be referred to as the dischargers.

2. In 1962, the facility was constructed and leased by Renault and Handley to SI, who reportedly occupied the facility until some time in 1970. A 1962 architectural rendering shows a diffusion room, masking area and large assembly room. The drawing also shows locations of trichloroethene (TCE) and acid lines that trend in a north-south direction through the east portion of the building to two sumps behind and immediately north of the building.

3. Information submitted by SI to Board staff on May 1, 1989, reported that SI used TCE, chromic acid, copper, lead and other heavy metals. It was also reported that waste solvent was poured into a drain that led to a gravity-fed sump in the rear of the building.

4. On or about September 29, 1966, a City of Sunnyvale building inspector and an industrial waste inspector performed a floor excavation inspection in the women's restroom complex at the request of a contractor involved in the repair of the underground building drain line. The City inspectors observed a cast iron building drain "was in most cases" corroded through. It was also observed that the acid waste neutralization tank effluent line was connected to the sanitary sewer line upstream from the restroom connections.

The corrosion of the sanitary sewer line was due to the acid waste effluent. Replacement of the sewer line was completed and later approved by the City of Sunnyvale on January 27, 1967.

5. City of Sunnyvale records indicate various measures were suggested to correct specific site conditions and practices. Some recommendations were aimed at improving the operation of the acid neutralization system. These included:

   a) further compartmentalizing the acid waste neutralization sump to separate acid waste and solvent waste,
   b) installing a new waste solvent influent line into the sump in order to separate the acid waste and solvent waste,
   c) installing a pump to remove accumulated waste solvent and,
   d) installation of a post-treatment waste acid line separate from the facility sanitary sewer.

   SI submitted to the City of Sunnyvale a schedule which indicated the corrections to be performed in order to remediate site conditions.

6. Prior to LC occupancy in 1977, owners and/or operators known as Elca Battery and I.P.T. (IPT) may have, or were known to have, occupied the site. Information supplied by SI stated Elca Battery occupied the site between 1970 and 1972. A 1975 drawing of the facility entitled "Existing Floor Plan" refers to IPT. If additional information comes to light showing that these parties or any other parties caused or permitted any waste to be discharged or deposited on the site where it entered or could have entered into the waters of the State, the Board will consider adding that party's name to the Order.

7. LC manufactured electronic circuitry and occupied the site from 1977 to 1987. The facility was leased by Renault and Handley to LC from 1977 to 1979; in 1979 LC purchased the building and property. Electronic circuitry manufacturing continued at the facility until LC ceased operations in 1987.

8. LC placed the manufacturing facility and property on the market for sale in 1988. The prospective buyer retained a consultant to perform an environmental assessment of the property. Metals were detected in the soil and solvents were detected in the soil and groundwater at the site.

9. Preliminary investigations during the environmental assessment at the former electronics facility detected elevated concentrations of volatile organic compounds (VOCs) in the soil and groundwater. Approximately eleven (11) soil samples were taken around the facility and three groundwater

monitoring wells were installed on the south, west and north sides of the property's building.

10. Reported chemical handling facilities at the site include a former above ground chemical treatment system, a former waste chemical storage area and an acid and trichloroethene (TCE) sump location. Soil and groundwater pollution existing near or under these handling facilities include TCE up to 610 ppb in the soil and 3600 ppb in the groundwater. Other pollutants found onsite include copper (45 ppm) and lead (5.2 ppm) in the soil and trans-1,2-dichloroethene at 240 ppb in the groundwater.

11. A proposed work plan for the site was submitted by LC to the Board on January 9, 1989. The plan proposes submittal of site use and chemical handling information, completion of a soil-gas survey, soil sampling and analysis, and installation of four groundwater monitoring wells to further define the extent of soil and groundwater pollution. The investigation will provide data for a feasibility study of site cleanup alternatives.

12. The proposed work plan was reviewed and comments were forwarded to LC on February 3, 1989. LC submitted a revised proposed work plan to the Board on March 6, 1989. A quarterly groundwater monitoring and sampling plan was submitted to the Board staff on May 12, 1989.

13. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters including Stevens Creek and its tributaries of the Palo Alto Hydrologic Area and the Santa Clara Valley groundwater basin.

14. The existing and potential beneficial uses of the Santa Clara Valley groundwater basin underlying and adjacent to the facility include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply.

15. The existing and potential beneficial uses of the surface water nearby the facility include:

    a. Groundwater recharge
    b. Navigation
    c. Contact water recreation
    d. Ocean commercial and sport fishing

e. Warm fresh water habitat
f. Preservation of area of special biological significance
g. Marine habitat
h. Potential fish migration.

16. The dischargers have caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

17. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

18. Onsite and offsite interim containment and cleanup measures need to be implemented to alleviate the threat to the environment posed by the continued migration of pollutants and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.

19. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

20. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The dischargers shall define the horizontal and vertical extent of all soil and groundwater pollution and the hydrogeologic conditions in the area of and contiguous to identified pollution.

3. The dischargers shall conduct monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of pollutant migration, additional pollutant characterization of pollutant extent may be required.

C. PROVISIONS

1. The dischargers shall submit to the Board acceptable monitoring program reports containing results of work performed according to a program as approved by and amended by the Board's Executive Officer.

2. The dischargers shall cooperate in implementing the provisions of the Site Cleanup Order.

3. The dischargers shall comply with Prohibitions A.1., A.2., and A.3., and Specifications B.1., B.2., and B.3. above, in accordance with the following time schedule and tasks:

TASK/COMPLETION DATE

a. SILICONIX INC. SITE USE HISTORY

TASK: SI shall submit a technical report acceptable to the Executive Officer about the site use-history containing the following information and descriptions: 1) ownership status and lease arrangements, 2) descriptions of original site construction including plans, permits and engineering studies, facility repairs and building modifications, 3) changes in manufactured products, 4) manufacturing processes, raw material

delivery locations and storage areas, handling practice changes through time, 5) a complete list of chemicals and metals used including annual quantities of each, 6) fully describe the location and maintenance of raw material and chemical storage facilities, 7) chemical handling practices including periodicity and locations of deliveries, onsite handling practices and site-use delivery paths, 8) disposal, treatment, transfer and storage of waste solvents, acids, bases, metals and plating solutions and names of chemical waste disposal companies, 9) accident history including facility damages, spills and human injuries and, 10) water use as an element of industrial processes including influent and effluent paths, chemical dilution procedures and locations and onsite water treatment facilities.

COMPLETION DATE: July 1, 1989

b. REVIEW OF THE PROPOSED WORK PLAN

TASK: The dischargers shall submit technical reports of reviews of the work plan for the site investigation and cleanup. The reports shall contain comments and proposed modifications or inclusions necessary for of the completeness of the site investigation. Proposed modifications or inclusions of new elements to the work plan will be considered by the Regional Board staff. Revisions to the work plan will be recommended for approval by the Executive Officer. Approved additions to the workplan shall be amended 30 days after approval.

COMPLETION DATE: June 28, 1989

c. REMEDIAL INVESTIGATION REPORT

TASK: Submit a technical report acceptable to the Executive Officer documenting completion of and presenting the results of the remedial investigation including evaluation of investigation data and a discussion of the extent of soil and groundwater pollution. Results of the site investigation shall include: 1) determination of the vertical and horizontal extent of soil and groundwater pollution, 2) survey of existing private and public wells within a half-mile radius of the site or any groundwater pollution plume emanating therefrom, and evaluation of their potential as conduits for vertical migration of pollutants, 3)

description of site hydrogeologic conditions, 4) characterization of chemical handling and storage facilities at the site, 5) an evaluation of the extent to which soil contamination at and/or beneath the facility may have contributed or may be contributing to groundwater pollution, and 6) recommendations for further investigation if deemed necessary.

COMPLETION DATE: September 1, 1989

d. PROPOSAL FOR INTERIM REMEDIAL ACTIONS

TASK: Submit a technical report acceptable to the Executive Officer which contains a plan for interim remediation onsite to include all proposed interim remedial actions and an implementation schedule. This report shall evaluate the identified polluted soils and groundwater and the need and alternatives for 1) interim cleanup of polluted soils, 2) control or containment of a migrating groundwater pollution plume, or, 3) conducting pilot or treatability studies for remedial actions.

The interim remedial plan shall include a completed NPDES permit application to discharge to surface waters, if such discharge is an element of the plan. The completed NPDES permit application will include an evaluation of the feasibility of water reuse, according to Regional Board Resolution 88-160, including, 1) reclamation of treated groundwater, which can include reinjection or use of water for irrigation, industry or other beneficial purpose, and/or, 2) discharge to a public-owned treatment works (POTW).

COMPLETION DATE: October 31, 1989

e. REPORT OF FURTHER SITE INVESTIGATIONS

TASK: Submit a technical report acceptable to the Executive Officer evaluating and presenting the results of the further investigations referred to in Task C.2.c. The additional work would be to further assess the extent of soil and groundwater pollution including the installation and sampling of any necessary additional borings, monitoring wells and/or soil-gas surveys.

COMPLETION DATE: May 15, 1990

f. EVALUATION OF INTERIM REMEDIAL ACTIONS

TASK: Submit a technical report acceptable to the Executive Officer which evaluates the effectiveness of the interim remedial actions. This report shall document and evaluate the remediation of polluted soils, if such remediation is an element of interim remedial actions. If interim remedial actions include hydraulic containment, such an evaluation shall include, but need not be limited to, an estimation of the flow capture zone of extraction wells, establishment of cones of depression by field measurements, and presentation of chemical monitoring data, if extraction wells are proposed. In the event that the hydraulic containment system is demonstrated not to be effective in containing and removing the pollutants, this report shall also make recommendations regarding specific modifications to the system, time schedule and any further interim remedial actions if deemed necessary.

COMPLETION DATE: December 1, 1990

g. FEASIBILITY STUDY (FS)

TASK: Submit a technical report acceptable to the Executive Officer presenting a feasibility study of proposed site cleanup alternatives, including the recommended measures from each alternative necessary to achieve final cleanup objectives. FS shall include the implementation schedules for each alternative. Final site cleanup levels will be determined by the Board.

COMPLETION DATE: February 1, 1991

h. FINAL SITE CLEANUP IMPLEMENTATION REPORT

TASK: Submit a technical report acceptable to the Executive Officer documenting implementation of final remedial measures. The report shall include: 1) selected cleanup method(s), 2) date, location and type of equipment installed, and, 3) start up date.

COMPLETION DATE: December 1, 1991

3. The submittal of technical reports evaluating interim and final remedial actions will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment of each alternative

measure. The remedial investigation and feasibility study shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

4. Any proposal for the discharge of extracted groundwater included in the technical reports under this Order must initially consider the feasibility of reclamation or discharge to a publicly owned treatment works (POTW) as specified in Board Resolution 88-160. If it can be demonstrated that reclamation or discharge to a POTW is technically and economically infeasible, a proposal for discharge to surface water shall be considered. The completion of Provision C.2.d. can satisfy the requirements of this provision to consider groundwater reclamation or discharge to a POTW.

5. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the dischargers shall promptly notify the Executive Officer.

6. Technical reports on compliance with this Order shall be submitted monthly to the Board commencing with a July, 1989 report, due on August 15, 1989, and covering the previous month. Continuing on a monthly basis thereafter, these reports shall consist of a letter report that,

   (1) summarizes work completed since submittal of the previous report, and work projected to be completed by the time of the next report,
   (2) identifies any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles, and
   (3) includes, in the event of non-compliance with Provision C.2. or any other Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

7. In addition to the monthly report required in Provision C.6., the dischargers shall submit results of quarterly groundwater quality monitoring as specified in the sampling and analysis plan, commencing with the July, 1989 calendar quarter due October 15, 1989, and continue thereafter on a calendar quarter basis. The quarterly reports shall include, but need not be limited to, cumulative results of water quality analyses, cumulative water level measurements, updated water table and piezometric surface maps for all affected water bearing zones, cross-sectional geological maps describing the hydrogeological setting of the site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent cultural features.

8. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain Quality Assurance/Quality Control records for Board review.

10. The dischargers shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. Copies of all correspondence, reports, and documents pertaining to compliance with this Order, shall be provided to the following agencies:

    a. Santa Clara Valley Water District
    b. Santa Clara County Health Department
    c. City of Sunnyvale
    d. State Department of Health Services/TSCD

    The Executive Officer may additionally require copies of correspondence, reports and documents pertaining to compliance with this Order to be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

12. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

    a. Entry upon the site, consistent with the site health and safety plan, in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

    c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

13. The dischargers shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.

14. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

15. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 21, 1989.

Steven R. Ritchie
EXECUTIVE OFFICER